
Space Weather Forecast

Issued on Tuesday, 30 November 2021 at 01:07 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: No Significant Activity Expected.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity was Very Low. There are currently four active sunspot regions on the visible disc. Two in the southwest quadrant, of which one is large and complex, and two in the northeast quadrant, both of which are small and simple. A weak CME from a filament lift off may have a slight Earth-directed component, likely arriving on 2nd December. No other Earth-directed CMEs were evident in available imagery.

Solar Wind / Geomagnetic Activity: The solar wind speed was at ambient levels. The Interplanetary Magnetic Field (IMF) strength, declined from moderate to weak through the period. The important north-south component of the field was weakly negative and declined to zero. These parameters suggest the very weak connection to a coronal hole initially before returning to background conditions. Geomagnetic Activity was mainly Quiet to Unsettled (Kp 0-3), but an Active (Kp 4) interval was observed 29/0000-0300 UTC.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to remain mostly Very Low, with a chance of common class flares, mainly from the more complicated and larger sunspot region in the southwest.

Solar Wind / Geomagnetic Activity: A coronal mass ejection may give a small chance of some impact at Earth on day 1 (30th). Enhancements from various coronal hole fast winds are expected through the period, including day 2 (1st), then a larger coronal hole possible late on day 3 or during day 4 (2nd or 3rd). A filament eruption which left the Sun on the 29th may also bring a brief elevation to solar wind speeds during day 3 (2nd). Geomagnetic activity is expected to be mostly Quiet to Unsettled, but with an ongoing chance of Active intervals. A very slight chance of G1/Minor Storms is maintained on days 1 and 2 (30th & 1st), but this increasing to a chance due to cumulative effects on days 3 and 4 (2nd & 3rd).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms observed.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	5	5	30	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	5	5	5	5
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)